

AMENDMENT NO. 1
TO THE 1995 RECORD OF DECISION FOR THE
STANDARD CHLORINE OF DELAWARE INC. SUPERFUND SITE
OPERABLE UNITS ONE AND TWO

NEW CASTLE COUNTY, DELAWARE

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9/23/04
Date

**STANDARD CHLORINE OF DELAWARE INC. SUPERFUND SITE
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FIGURE 1 – SITE LOCATION MAP

RESPONSIVENESS SUMMARY

**Amendment No. 1 to the 1995 Record of Decision
Operable Units One and Two
Standard Chlorine of Delaware, Inc. Superfund Site**

I. INTRODUCTION

Site Name: Standard Chlorine of Delaware, Inc. Superfund Site (SCD Site or Site)

Site Location: New Castle County, Delaware (See Figure 1)

Lead Agency: United States Environmental Protection Agency, Region III (EPA)

Support Agency: Delaware Department of Natural Resources and Environmental Control (DNREC)

Statement of Purpose

EPA issued a Record of Decision (ROD) for the Standard Chlorine of Delaware, Inc. Superfund Site (aka Metachem) on March 9, 1995. This Amendment No. 1 to the ROD (Amendment) presents off-site incineration as the Selected Remedy for the approximately 1.3 million gallons of bulk liquid chemicals¹ to be removed from aboveground storage tanks on the Site. The Selected Remedy was chosen in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, (CERCLA), as amended, 42 USC §§9601 *et seq.*, and with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300.

This Amendment is issued in accordance with CERCLA §117, 42 USC §9617, and the NCP § 300.435(c)(2)(ii), 40 CFR § 300.435(c)(2)(ii). This Amendment has been prepared to document the nature of the addition to the selected remedy identified in the 1995 ROD; to summarize the information that led to the Amendment; and to affirm that the Amendment complies with the statutory requirements of CERCLA §121 and, to the extent practicable, with the NCP. This Amendment fundamentally alters the remedy selected in the 1995 ROD with respect to scope, performance, and cost.

The liquid chemicals addressed in this Amendment were not addressed in the original ROD because the plant was then an operating facility and these chemicals were part of the plant's ongoing operations. The plant is no longer operating. As long as they remain on-site these chemicals pose a

¹ Appendix A of the Focused Feasibility Study, dated February 27, 2004, contains an inventory of these liquid chemicals as of November 24, 2003. Ongoing cleanup activities at the Site, including returning some liquid chemicals to commerce and additional separation, will result in changes to this inventory before the remedy is implemented. If the chemicals are not transferred to third parties as product, EPA will determine that such chemicals are solid and/or hazardous wastes, and will handle and dispose of the chemicals in accordance with applicable laws and regulations.

threat to ground water, soil, and on-site personnel through an uncontrolled release. This Amendment does not change the remedy selected in the 1995 ROD; rather, it adds a component to address these chemicals as a source control measure. The response action selected in this Amendment is necessary to protect the public health and welfare and the environment from threatened releases of hazardous substances into the environment.

This Amendment is incorporated into the Administrative Record for the Site. The Administrative Record file is available for public review online at www.epa.gov/arweb and at the following locations:

Delaware Department of Natural
Resources & Environmental Control
Site Information and Restoration Branch
391 Lukens Drive
New Castle, DE 19720-2774
302-395-2600 (Call first)

U.S. EPA Region III
Ms. Anna Butch
6th Floor Public Reading Room
1650 Arch Street
Philadelphia, PA 19103
215- 814-3157 (Call first)

II. SITE HISTORY, CONTAMINATION, AND SELECTED REMEDY

Site History and Contamination

The Standard Chlorine of Delaware (SCD) facility was built in 1965 on farmland that was previously owned by the Diamond Alkali Company. The Diamond Alkali Company had previously purchased the land from the Tidewater Refinery Company. Chlorinated benzene compounds were manufactured on-site from 1966 until the facility's closure in May 2002. Chlorine (piped in from the Occidental Chemical facility to the east) and benzene (obtained primarily from the refinery located just to the south) were the main raw materials for the chlorinated benzene production. The facility expanded in the early 1970s to begin production of chlorinated nitrobenzene and to increase production of monochlorobenzene (MCB), dichlorobenzenes (DCBs), and trichlorobenzenes (TCBs). Production of chlorinated nitrobenzene ended in the late 1970s, and the related capacity was switched to the production of MCB. The facility was also expanded in the late 1970s. Following that expansion, the SCD facility produced MCB, DCBs, TCBs, and chlorobenzene-based insulating fluids.

A series of major releases of chlorobenzene compounds in 1981 and 1986, totaling over 574,000 gallons, led to the listing of the Site on the National Priorities List (NPL) in 1987. An Administrative Order on Consent (AOC) between DNREC and SCD covering the performance of a Remedial Investigation and Feasibility Study (RI/FS) at the SCD Site was signed on January 12, 1988 and amended on November 14, 1988. EPA issued a ROD for the Site on March 9, 1995, and a Unilateral Administrative Order (UAO) for Remedial Design/Remedial Action (RD/RA) was issued by EPA to SCD on May 30, 1996.

In December of 1998, the SCD facility and property were sold to Metachem Products, LLC (Metachem). Metachem continued remedial design activities. On April 30, 2002, following the filing of a bankruptcy petition by one of its major customers, Metachem announced that it would be closing the SCD facility. At that time, Metachem did not specify a closing date, and left open the possibility

of having the plant operate at a reduced capacity. Metachem closed the facility on May 4, 2002 and filed a bankruptcy petition six days later (May 10, 2002). Shortly after filing the bankruptcy petition, Metachem abandoned the SCD Site (on May 14, 2002) to the custody and control of EPA and DNREC. Since then, EPA and DNREC have been cooperating in the implementation of an emergency cleanup action and in determining an approach for the long-term cleanup of the Site. While the SCD facility is no longer an active manufacturing plant, EPA and DNREC are removing chemicals from the Site and are working to decontaminate the Site.

Scope and Role of Selected Remedy

Because the problems at the Site are complex, EPA has organized the cleanup work into three Operable Units (OUs):

- Operable Unit One: Interim action for ground water
- Operable Unit Two: Final action for soils and sediments
- Operable Unit Three: Final action for ground water and plant

EPA selected a remedy for what are now known as Operable Units One and Two in a ROD signed on May 9, 1995, although the ROD did not refer to operable units. The interim action for ground water called for containment of ground water to minimize continued release of contaminants. This action is currently in the remedial design stage. The final action selected for soils and sediments was treatment, either by bioremediation or by Low Temperature Thermal Desorption. EPA is currently re-evaluating the remedy for soils and sediments and is conducting treatability studies of in-situ chemical oxidation. EPA is conducting an RI/FS for Operable Unit 3, which will lead to a ROD for that operable unit.

This document amends the 1995 ROD to add a response action to address the bulk liquid chemicals to be removed from on-site aboveground storage tanks. These liquid chemicals are being addressed as a source control measure to protect ground water, soil, and on-site personnel. This Amendment does not change the remedy selected in the 1995 ROD; rather it adds a component to address these liquid chemicals.

EPA's Selected Remedy for the approximately 1.3 million gallons of bulk liquid chemicals that are currently on-site in aboveground storage tanks (ASTs) is off-site incineration. This remedy provides for the transportation and incineration of these chemicals after EPA determines that they are hazardous wastes. The Selected Remedy detailed in this Amendment will be a source control measure protecting ground water, soil, and on-site personnel from a potential uncontrolled release of these chemicals.

III. REASONS FOR ISSUING AMENDMENT NO. 1

Following Metachem's abandonment of the SCD Site to the custody of EPA and DNREC in 2002, EPA and DNREC took steps to stabilize the Site and minimize risk. At this time, one of the most significant risks remaining at the Site is that posed by the continuing presence on-site of large volumes of liquid chemicals.

The chemicals addressed in this Amendment were not addressed in the 1995 ROD because the plant was then an operating facility. The plant is no longer operating. As long as these chemicals remain on-site, they pose a threat to ground water, soil, and on-site personnel through an uncontrolled release. EPA has not yet determined these chemicals to be wastes. If the chemicals are not transferred to third parties as product, EPA will determine that such chemicals are solid and/or hazardous wastes, and will handle and dispose of the chemicals in accordance with applicable laws and regulations. Once determined to be wastes, the liquid chemicals addressed in this Amendment are considered principal threat wastes because they are highly toxic and if their containment failed they would be highly mobile. They pose a significant risk to human health and the environment should exposure occur.

EPA conducted a Focused Feasibility Study (FFS), documented in a report dated February 27, 2004, to develop and screen various options for addressing these liquid chemicals. Using the FFS and other information in the Administrative Record, and in accordance with CERCLA §117, 42 USC §9617, and the NCP §300.435(c)(2)(ii), 40 CFR §300.435(c)(2)(ii), EPA developed and issued a Proposed Remedial Action Plan (PRAP) in April 2004. The PRAP proposed adding a component to the cleanup plan for the Site to address the liquid chemicals. The PRAP was released for public comment on April 22, 2004. The comment period ended May 21, 2004, and EPA's responses to the comments it received are included in the Responsiveness Summary Section at the end of this Amendment.

IV. DESCRIPTION OF THE NEW ADDITION TO THE REMEDY

Following review and consideration of the information in the Administrative Record File, the requirements of CERCLA, the NCP, and public comment, EPA has selected the following remedial response action to be implemented at this Site in addition to the actions included in the 1995 ROD.

General Description of the Selected Remedy

The selected remedy, off-site incineration, provides for the transportation and disposal of the approximately 1.3 million gallons of liquid chemicals that are currently on-site in aboveground storage tanks (ASTs) after EPA has determined that these chemicals are hazardous wastes.

Remedial Action Objective (RAO)

The Remedial Action Objective for the liquid chemicals addressed in this Amendment is the removal off-site of any liquid chemicals located on-site that may act as a continuing source of ground water and soil contamination, and harmful exposure to on-site personnel.

V. SUMMARY OF ALTERNATIVES

In the Focused Feasibility Study (FFS), EPA identified seven alternatives for addressing the liquid chemicals: no-action; landfilling; off-site incineration; on-site incineration; chemical oxidation;

limited separation/incineration; and expanded separation/incineration. In the FFS, EPA screened the alternatives for their effectiveness, implementability, and cost over the short- and long-term in accordance with 40 CFR § 300.430(e)(7).

A. Alternatives Screened Out

Three alternatives – landfilling, on-site incineration, and chemical oxidation – were screened out and not carried forward into the comparative analysis of alternatives. Descriptions of these three alternatives and the reasons why they were screened out follow.

1. Landfilling

Landfilling is a traditional method of waste disposal. Landfilling of materials is generally a more cost-effective method of disposal than incineration, chemical oxidation, or other methods of disposal. While it would not be appropriate to landfill all of the materials addressed in the FFS because of limitations contained in the Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act (RCRA)² and the Toxic Substances Control Act (TSCA)³, EPA identified this alternative for screening purposes and to evaluate possible treatment of the material prior to disposal. In previous efforts conducted at the Site, EPA tried to stabilize different chlorobenzene mixtures. Solidification of mixed chlorobenzenes through the addition of a stabilizing agent proved unreliable. Instead, EPA separated the liquids into a lighter fraction that was allowed to remain liquid and a heavier fraction that was solidified in heavy duty plastic storage containers known as totes. Before separation, some of the liquid chemicals contained PCBs. These liquid chemicals could not have been solidified just for the purpose of sending them to a landfill⁴, since under TSCA liquids containing PCBs at concentrations of 50 parts per million (ppm) and above must be incinerated⁵. In addition, some of the liquid chemicals could be RCRA-regulated characteristic wastes and/or listed wastes, subject to the land disposal restrictions of 40 CFR Part 268, and could not be disposed of in a landfill. The liquid chemicals could carry listed hazardous waste codes D018 (benzene), D021 (MCB), D027 (paradichlorobenzene (pDCB)), K085 (distillation column bottoms), and/or K105 (aqueous stream from reactor washing), or could be similar to such listed hazardous wastes.

Landfilling does not meet the goals of reducing toxicity and minimizing waste generated. This alternative would not comply with applicable legal requirements as described above. As such, this

² RCRA: 42 USC §§ 6901 *et. seq.*

³ TSCA: 15 USC §§ 2601 *et. seq.*

⁴ 40 CFR § 761.50(a)(2) - No person may process liquid PCBs into non-liquid forms to circumvent the high temperature incineration requirements of §761.60(a).

⁵ 40 CFR § 761.60(a) - PCB Liquids at concentrations of 50 ppm and above must be disposed of in an incinerator. There are some exceptions for liquids at concentrations between 50 and 500 ppm, but they will not apply to any of the liquids being addressed here.

alternative was eliminated from further consideration.

2. On-Site Incineration

Incineration is another traditional method of disposing of wastes. Incineration would be an appropriate disposal method for liquid chemicals such as those addressed in this Amendment, disposal of which is governed by the Resource Conservation and Recovery Act (RCRA) and the Toxic Substances Control Act (TSCA). Characteristic and listed hazardous wastes are often disposed of by incineration.

Similar to the off-site incineration alternative, which will be discussed later, on-site incineration of the materials may also be an effective method in reducing the toxicity, mobility, and volume of the materials on-site. This alternative would also reduce the risks associated with transport of the materials.

On-site incineration would require a significant investment in equipment. An incinerator capable of effectively destroying RCRA and TSCA wastes would be required. While the equipment may be available, Delaware's Coastal Zone Management Act (7 Del. Code, Chapter 70) would prohibit this new process from being constructed at the Site. Finally, while the cost to mobilize an incinerator to the Site to address these materials has not been formally estimated, based on preliminary estimates this cost is higher than that of off-site incineration.

This alternative does not comply with Applicable or Relevant and Appropriate Requirements (ARARs), since construction of an incinerator would violate Delaware law, as discussed immediately above. As such, this alternative was not retained for further consideration.

3. Chemical Oxidation

Chemical oxidation of materials could result in the reduction of toxicity and volume of the materials. Chemical oxidation of chlorinated benzenes, particularly heavily chlorinated benzene compounds (DCBs, TCBs and tetrachlorobenzenes (TeCBs)), is difficult. Chemical oxidation of chlorinated benzenes is most often done when the chlorinated benzenes are present at low concentrations, such as dissolved in groundwater or in soils and sediments. Since the liquid chlorobenzenes being addressed in this Amendment are present at extremely high concentrations, chemical oxidation would not effectively dispose of these liquid chemicals.

During the identification of possible remedies, an innovative technology known as direct chemical oxidation (using peroxydisulfate, a particularly strong oxidant) was found to be effective in oxidizing chlorinated benzenes. Chemical oxidation using peroxydisulfate could be accomplished by reacting the waste in an aqueous stream, resulting in relatively innocuous products, including the expended oxidant (which can be reclaimed), carbon dioxide, water, and inorganic residues (salts). The reaction can be used for the complete destruction of the chlorinated benzenes. However, since there are very few people with experience in the peroxydisulfate chemical oxidation of chlorobenzenes, it may be difficult to arrange for the personnel necessary to implement this alternative. Typically, some pilot scale research, and scaling of the pilot data, are required.

While the alternative is effective and can be implemented (overcoming issues with obtaining the proper personnel), the costs to implement this alternative are grossly excessive compared to the overall effectiveness of the alternative, more than 20 times higher than the cost to incinerate the materials. Although both incineration and chemical oxidation are disposal alternatives that may be implementable and effective, chemical oxidation costs are significantly higher; therefore, this alternative was not retained for further consideration.

B. Remaining Alternatives

Four alternatives were carried forward from the initial screening. The first of these was the no-action alternative, which was not protective, but was carried forward as a baseline for comparison. The other three alternatives (off-site incineration, limited separation/incineration, and expanded separation/incineration) differed primarily in the degree to which the liquid chemicals were separated before off-site incineration. The greater the degree of separation, the greater the cost and short-term risks associated with operating a portion of the plant to do the separation, but the greater the savings in time and cost of incineration by reducing the volume of material requiring TSCA incineration. EPA's Superfund Removal and Remedial Programs function in accordance with their respective authorities under the NCP. The Removal Program generally deals with actions that are more limited in scope and are taken over a shorter time frame. The Remedial Program addresses the long-term cleanup plan for sites listed on the NPL. EPA Region III authorized the Removal Program to conduct actions at this Site in several Action Memoranda dated May 17, 2002, July 1, 2002, March 3, 2003, and May 5, 2004. Pursuant to these authorizations, the Removal Program has performed the activities described in the FFS as "limited separation" and completed this separation in July 2004. Since the degree to which the materials were separated before disposal is now known, this Amendment will evaluate a single off-site incineration alternative. It is important to note that this is not the off-site incineration alternative from the FFS, since that alternative assumed all of the liquid chemicals were taken off-site for incineration without any further separation. Instead, the off-site incineration alternative discussed below (Alternative 2) is the transportation and off-site incineration portion of the FFS's limited separation/incineration alternative.

Alternative 1: No-Action

<i>Estimated Capital Cost:</i>	\$ 0
<i>Estimated Annual O&M Cost:</i>	\$ 1,554,800
<i>Estimated Present Worth Cost⁶:</i>	\$ 19,293,577
<i>Estimated Construction Time Frame:</i>	0
<i>Estimated Time to Achieve RAOs:</i>	Will not achieve RAOs

The no-action alternative would require the liquid chemicals to remain on-site. Materials of concern would remain in aboveground storage tanks (ASTs) or be transferred to the most suitable AST available. The ASTs are located in containment areas. EPA would be on-site to monitor the ASTs for leaks and releases for an indefinite period of time.

⁶ A discount rate of 7% was used for all present worth cost estimates in this Amendment.

The no-action alternative is not considered protective as it does not eliminate the risk of a release of toxic chemicals. This alternative is not effective in meeting the remedial action objective of removing liquid chemicals off-site that are currently stored on-site that may act as a continuing source of ground water and soil contamination and harm to on-site personnel. The no-action alternative is easily implementable. The costs associated with this alternative would be approximately \$1.5 million per year for an indefinite period. Labor costs for these monitoring and maintenance personnel, as well as minor maintenance costs such as containment pad repair, are included in the cost estimate. The potentially large cleanup costs associated with responding to a leak or catastrophic tank failure are not included in the cost estimate. Although the no-action alternative does not satisfy the threshold criteria of being protective of human health and the environment, it will be carried forward into the comparative analysis section to serve as a baseline for comparison.

Alternative 2: Off-site Incineration

<i>Estimated Capital Cost:</i>	\$ 8,394,740
<i>Estimated Annual O&M Cost:</i>	\$ 0
<i>Estimated Present Worth Cost:</i>	\$ 8,394,740 ⁷
<i>Estimated Construction Time Frame:</i>	9 months
<i>Estimated Time to Achieve RAOs:</i>	9 months

Alternative 2 - off-site incineration provides for the transportation and disposal of the approximately 1.3 million gallons of liquid chemicals to be removed from aboveground storage tanks (ASTs) at the Site after EPA has determined that these chemicals are RCRA hazardous wastes and/or TSCA PCB wastes. Other cleanup activities at the Site, including returning some liquid chemicals to commerce and limited separation of some of the materials in tanks, have already changed this volume. The volume of liquid to be disposed of will continue to change until the remedy is implemented.

The Facility's existing distillation equipment was used to separate the materials by boiling point – materials with lower boiling points are referred to as “light,” while those with higher boiling points are “heavy.” The streams resulting from distillation are a “light” stream, containing MCB, DCBs, TCBs, and some of the TeCBs, and a “heavy” stream containing some of the TeCBs, PCBs and other, heavier compounds.

The lighter stream does not contain PCBs (reducing the toxicity of that stream), making treatment and disposal quicker and less expensive. The heavier stream contains concentrations of PCBs at or above 50 ppm, and is therefore subject to TSCA regulations.

Separation expedites implementation of the treatment and disposal action. There are a limited number of EPA-approved TSCA incinerators, and the capacity of those facilities is also limited. Incineration of the PCB-containing materials is the controlling factor in scheduling, or the longest lead-time effort, when compared to incineration of RCRA wastes. Because of the separation, and the

⁷ This cost estimate is lower than the \$9.3M cost estimate for the Off-site Incineration alternative in the Proposed Plan. After the public comment period, EPA decided that the Superfund Removal Program would load the chemicals, so loading would not be a part of this remedial action. A revised cost estimate reflecting this change is a part of the Administrative Record.

resulting decrease in the volume of material requiring TSCA incineration, this alternative can be implemented in approximately 9 months, as compared to incineration of materials in their unseparated state, which would have taken about 2.5 years.

In addition to the limited separation alternative described here, EPA also evaluated a more complete separation process referred to as “expanded separation” that would have further separated the liquid chemicals. However, EPA determined that the costs and risks associated with expanded separation outweighed the potential savings in disposal costs.

After the Proposed Plan was issued, EPA obtained information about thermal destruction in an EPA-permitted RCRA cement kiln and concluded that a portion of the liquid chemicals may be effectively treated in either an EPA-permitted RCRA cement kiln or an EPA-permitted RCRA incinerator. As a result, this alternative allows for the use of an EPA-permitted RCRA cement kiln if applicable.

The off-site incineration alternative can be successfully implemented. Off-site incineration complies with Federal and State ARARs, with RCRA regulations applicable to transporters of hazardous waste, and with laws governing activities within the coastal zone. Off-site incineration is an effective treatment technology that would reduce the toxicity, mobility, and volume of these liquid chemicals. Off-site incineration of the liquid chemicals remaining after limited separation can be implemented for approximately \$8.4 million. Because this alternative is effective and implementable it will be retained for further review and evaluation.

C. Explanation of ARARs

Section 121(d) of CERCLA requires that remedial actions at Superfund sites at least attain legally applicable or relevant and appropriate cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under Federal or State law. These standards are collectively referred to as “ARARs” and they must be met unless such ARARs are waived under CERCLA § 121(d)(4).

“Applicable” requirements are those cleanup standards, standards of control, and other substantive environmental requirements, criteria or limitations promulgated under Federal or State law that specifically address a hazardous substance, pollutant, or contaminant, remedial action, location, or other circumstance at a Superfund site. “Relevant and appropriate” requirements are those requirements that, while not legally “applicable,” address problems or situations sufficiently similar to those encountered at a site that their use is well suited to the particular site. Only those State standards that are promulgated, are identified by the State in a timely manner, and are more stringent than Federal requirements may be applicable or relevant and appropriate. ARARs may relate to the substances addressed by the remedial action (chemical-specific), to the location of the site (location-specific), and/or to the manner in which the remedial action is implemented (action-specific).

In addition to applicable or relevant and appropriate requirements, the lead agency may, as appropriate, identify other advisories, criteria, or guidance to be considered for a particular remedial action. The “to be considered” (TBC) category consists of advisories, criteria, or guidance that were developed by EPA, other Federal agencies, or states that may be useful in developing CERCLA remedies. EPA did not identify any TBCs for this remedial action.

The identification of ARARs in this Amendment supplements the discussion of ARARs developed in the FFS and the 1995 ROD. The ARARs identified in this Amendment relate only to the response actions addressed in this document; ARARs relating to the response actions selected in the 1995 ROD, which are not affected by this Amendment, are not discussed in this document.

The ARARs listed below have been identified for the Off-site Incineration Alternative, which includes only transportation and incineration of the liquid wastes. On-Site actions (i.e., within the areal extent of contamination and all suitable areas in very close proximity to the contamination necessary for implementation of the response action) need comply only with the substantive aspects of ARARs, not with the corresponding administrative requirements (e.g., issuance of permits, documentation, and record keeping).

1. Standards Applicable to Transporters of Hazardous Waste, Delaware Regulations Governing Hazardous Waste, Part 263.10-31, are applicable to the handling and transport of regulated hazardous wastes, and are relevant and appropriate to the handling and transport of wastes that are sufficiently similar to regulated hazardous wastes. Establishes standards for transporters of hazardous wastes including waste identification numbers, manifesting requirements, and actions required in the event of a hazardous waste discharge. This remedy requires the off-site transport and disposal of waste determined to be hazardous; these requirements will be met for such wastes, and for wastes that are sufficiently similar to regulated hazardous wastes. Only substantive requirements will be met.
- 1a. Standards Applicable to Transporters of Hazardous Waste, Resource Conservation and Recovery Act of 1976, Hazardous and Solid Waste Amendments of 1984, 40 CFR Part 263, are applicable to the handling and transport of regulated hazardous wastes, and are relevant and appropriate to the handling and transport of wastes that are sufficiently similar to regulated hazardous wastes. State regulations would apply for those regulations for which EPA has authorized Delaware to administer pursuant to 40 CFR Part 271.
2. Federal Coastal Zone Management Act, 16 USC 1451 *et. seq.*, 15 CFR Part 930, is an applicable requirement. It requires that Federal agencies conducting or supporting activities directly affecting the coastal zone, conduct or support those activities in a manner that is consistent with the approved appropriate State coastal zone management program. The Site is within the coastal zone. This remedy will be conducted in a manner that is consistent with the approved Delaware coastal zone management program, which is found at Title 7 Delaware Code, Chapter 70, to the maximum extent practicable, but no procedural requirements in the regulations must be followed.

Other Requirements

Although the Occupational Safety and Health Administration (OSHA) standards governing worker safety during hazardous waste operations set forth at 29 CFR Parts 1904, 1910, and 1926 are not ARARs, they must be complied with during all Site work.

VI. EVALUATION OF ALTERNATIVES

Alternative 1 – No-Action, and Alternative 2 – Off-site Incineration, which are described above, were evaluated according to the nine criteria in the NCP, 40 CFR § 300.430(e)(9)(iii), as set forth in “*Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA*” (EPA, October 1988), and “*A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents*” (EPA 540-R-98-031, July 1999). These nine criteria can be further categorized into three groups: threshold criteria, primary balancing criteria, and modifying criteria. Threshold criteria must be satisfied in order for a remedy to be eligible for selection. Primary balancing criteria are used to weigh major trade-offs between alternatives. Acceptance by the State and community are modifying criteria formally considered after public comment is received on the Proposed Plan.

The following summary profiles the performance of each alternative in terms of the nine criteria, noting how it compares to the other alternative under consideration.

1. Overall Protection of Human Health and the Environment

Overall protection of human health and the environment is a threshold criterion. While some alternatives may present better scenarios for overall protection, this criterion is not measured by degree. Each alternative is considered to be either protective or not protective.

The no-action alternative does not result in the elimination of the risk from release of these chemicals from the Site, and is not a reliable, permanent solution. The no-action alternative is not protective of human health and the environment because over 1.3 million gallons of liquid chemicals would remain at the Site posing a long-term risk of release.

The off-site incineration alternative eliminates the potential for release of these liquid chemicals from the Site. As all materials in this alternative are incinerated, human health and the environment are protected. This alternative is also permanent.

2. Compliance with ARARs

Section 121(d) of CERCLA, 42 USC §9261(d), and the NCP §300.430(f)(1)(ii)(B), 40 CFR §300.430(f)(1)(ii)(B), require that remedial actions at CERCLA sites at least attain legally applicable or relevant and appropriate Federal and State requirements, standards, criteria, and limitations, which are collectively referred to as “ARARs,” unless such ARARs are waived under CERCLA section 121(d)(4).

Applicable requirements are those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under Federal environmental or State environmental or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance found at a CERCLA site. Only those State standards that are identified by a state in a timely manner and that are more stringent than Federal requirements may be applicable. Relevant and appropriate requirements are those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under

Federal environmental or State environmental or facility siting laws that, while not “applicable” to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well-suited to the particular site. Only those State standards that are identified by a state in a timely manner and that are more stringent than Federal requirements may be relevant and appropriate.

Compliance with ARARs addresses whether a remedy would meet all of the applicable or relevant and appropriate requirements of Federal and State environmental statutes or provides a basis for invoking a waiver.

The no-action alternative would not comply with all of its Federal and State ARARs. For example, the requirements governing storage or treatment of hazardous waste in tank systems, 40 CFR Sections 264.190-199 and the Delaware Regulations Governing Hazardous Waste, Part 264.190-199, would not be met. Additionally, this alternative would not comply with the TSCA requirements governing storage of material determined to be PCB waste, at 40 CFR § 761.65. Because this remedy pertains to an operable unit of a site where CERCLA actions have been taken, ARARs are relevant to the no-action alternative.

Alternative 2 - Off-site Incineration would meet its Federal and State ARARs. Additionally, the off-site actions of the remedy would comply with all substantive and procedural requirements of applicable Federal, State, and local laws in effect at the time of the off-site treatment and disposal.

3. Long-term Effectiveness and Permanence

The long-term effectiveness criterion evaluates the protection of human health and the environment over time, once the remedial action goals have been achieved. It focuses on the magnitude of residual risk and the adequacy and reliability of controls. Under the no-action alternative the liquid chemicals would remain on-site and continue to pose a significant residual risk. Off-site incineration would meet the goal of permanently eliminating the threat of release of these liquid chemicals from the Site. All of the liquid chemical wastes would be removed from the Site and be properly disposed of.

4. Reduction of Toxicity, Mobility, or Volume through Treatment

Section 121(b) of CERCLA, 42 U.S.C. § 9621(b), establishes a preference for remedial actions that include treatment that permanently and significantly reduces the toxicity, mobility, or volume of contaminants. The no-action alternative would not provide any reduction in the toxicity, mobility, or volume of the liquid chemicals. Incineration is thermal treatment. Therefore, off-site incineration would permanently and significantly reduce the toxicity, mobility, and volume of contaminants in the liquid chemicals through treatment.

5. Short-Term Effectiveness

This criterion evaluates the alternatives against the period of time needed to achieve protection

of human health and the environment and any adverse effects that may occur during the construction and operation period before cleanup goals are achieved. The short-term risks associated with the no-action alternative are lower, because the no-action alternative does not involve any of the handling and transportation of the liquid chemicals that are part of the off-site incineration alternative. However, the risk of a release of liquid chemicals continues indefinitely under the no-action alternative.

6. Implementability

Both alternatives are implementable using conventional construction equipment, but the questionable long-term reliability of the aboveground storage tanks (ASTs) used to store the liquid chemicals makes the no-action alternative less desirable.

7. Cost

The estimated present worth cost for Alternative 1- No-Action, is \$19,293,577. The Preferred Alternative, Alternative 2 - Off-site Incineration, has a significantly lower estimated present worth cost of \$8,394,740.

8. State Acceptance

The State of Delaware assisted EPA in the development of the remedial alternatives and supports the selection of Alternative 2 - Off-site Incineration.

9. Community Acceptance

EPA and DNREC encouraged the public to review and comment on each of the alternatives evaluated in the Proposed Plan, and other documents in the Administrative Record file, during the public comment period, which began on April 22, 2004 and ended on May 21, 2004. On Tuesday, May 4, 2004 at 7:00 p.m., EPA held a public meeting to discuss the Proposed Plan at Southern Elementary, 795 Cox Neck Rd., New Castle, DE 19720.

Comments received during the comment period for the Proposed Plan were generally supportive of EPA's preferred alternative, off-site incineration, although a vocal minority opposed the use of incineration technology. A more detailed summary of relevant comments and questions received at the public meeting and during the public comment period is included in the Responsiveness Summary section at the end of this ROD Amendment.

VII. SUPPORT AGENCY COMMENTS

The State has expressed its support for Alternative 2 - Off-site Incineration. The State does not believe Alternative 1 - No-Action, provides adequate protection of human health and the environment.

VIII. STATUTORY DETERMINATIONS

The Selected Remedy for addressing the liquid chemicals remaining on-site is Alternative 2, off-site incineration. Based on information currently available, EPA believes the Selected Remedy

meets the threshold criteria and provides the best balance of tradeoffs among the other alternatives with respect to the balancing and modifying criteria. The Selected Remedy satisfies the statutory requirements of CERCLA §121(b) in that it: 1) is protective of human health and the environment; 2) complies with ARARs; 3) is cost-effective; 4) utilizes permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable; and 5) satisfies the preference for treatment as a principal element.

IX. DOCUMENTATION OF SIGNIFICANT CHANGES FROM PREFERRED ALTERNATIVE OF THE PROPOSED PLAN

The Proposed Plan for the SCD Site was released for public comment in April 2004. The Plan identified Alternative 2 - Off-site Incineration, as the Preferred Alternative for remediation. Alternative 2 included loading of the liquid chemicals as part of the remedial action. After the public comment period, EPA decided that the Superfund Removal program would load the chemicals, so loading (and associated ARARs) would not be part of this remedial action. The scope of this remedial action is now limited to transportation and disposal of the chemicals. The ARARs identified for the Off-site Incineration alternative are those that would govern the transportation and disposal of the chemicals. A revised cost estimate reflecting this change is a part of the Administrative Record.

X. FIVE-YEAR REVIEW REQUIREMENTS

EPA conducts five-year reviews pursuant to Section 121(c) of CERCLA, 42 USC § 9621(c) and as provided in OSWER Directive 9355.7-03B-P, *Comprehensive Five-Year Review Guidance*, June 2001, to ensure that the remedy continues to protect human health and the environment. Although the remedial action called for in this Amendment would remove all of the bulk liquid chemicals from the Site, there will still be other hazardous substances, pollutants, or contaminants on-site above levels that allow for unlimited use and unrestricted exposure. Therefore, EPA will conduct a statutory five-year review for the Site within five years from the initiation of this first remedial action for this Site.

XI. PUBLIC PARTICIPATION

EPA and DNREC encouraged the public to review and comment on each of the alternatives evaluated in the Proposed Plan, and other documents in the Administrative Record file, during the public comment period, which began on April 22, 2004 and ended on May 21, 2004. On Tuesday, May 4, 2004 at 7:00 p.m., EPA held a public meeting to discuss the Proposed Plan at Southern Elementary, 795 Cox Neck Rd., New Castle, DE 19720. The notice of availability of these documents was published in the News Journal, Wilmington, Delaware, the largest-circulation newspaper in New Castle County, Delaware. These public participation activities were conducted in accordance with CERCLA §117 and NCP § 300.435(c)(2)(ii).

FIGURE 1 – SITE LOCATION MAP

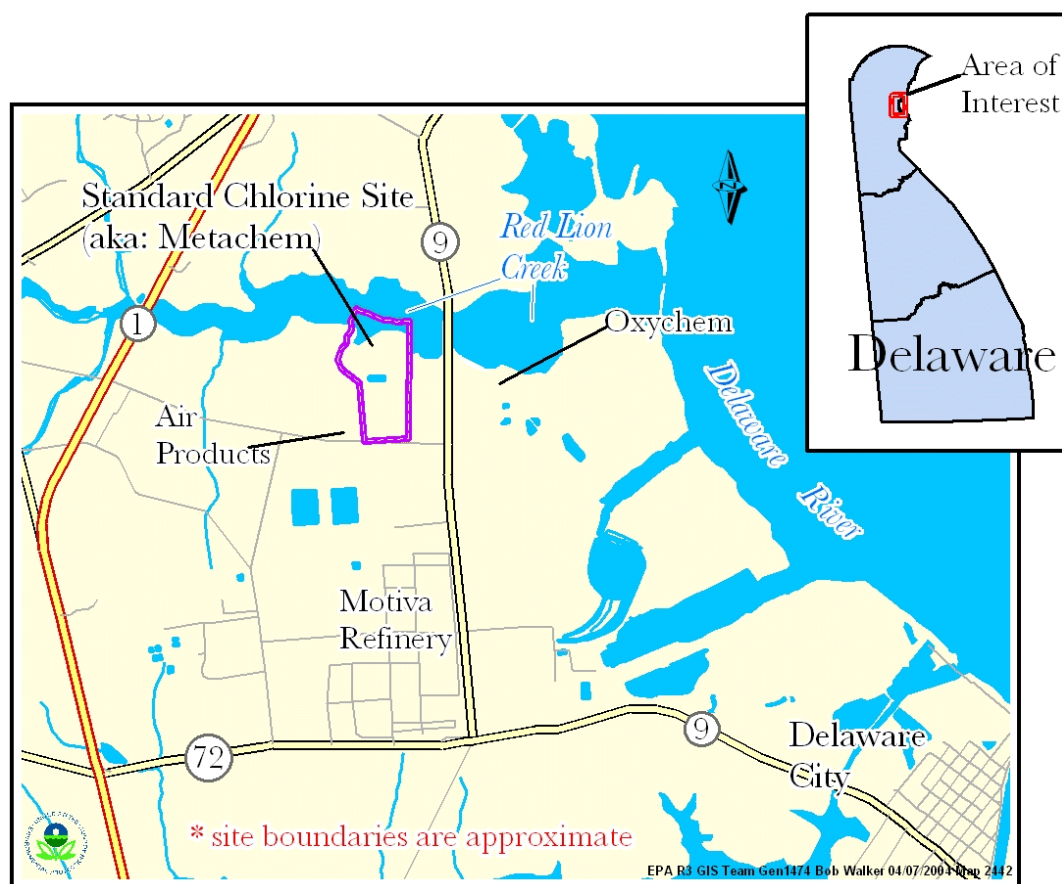


Figure 1 - Standard Chlorine Site Map

RESPONSIVENESS SUMMARY
FOR AMENDMENT NO. 1
TO THE 1995 RECORD OF DECISION FOR THE
STANDARD CHLORINE OF DELAWARE INC. SUPERFUND SITE
OPERABLE UNITS ONE AND TWO

NEW CASTLE COUNTY, DELAWARE

Public Comment Period:
April 22, 2004, through May 21, 2004

**RESPONSIVENESS SUMMARY
STANDARD CHLORINE OF DELAWARE, INC. SUPERFUND SITE
OPERABLE UNITS ONE AND TWO
NEW CASTLE COUNTY, DELAWARE**

This responsiveness summary addresses public comments received during the public comment period, which EPA has determined to be relevant to the selection of a cleanup method for the liquid chemicals to be removed from the Site. A brief overview is followed by a summary of public comments and EPA's responses.

OVERVIEW

There have been many significant changes at the Site since the 1995 ROD was issued. Among these were the sale of the plant to Metachem Products, LLC in December 1998 followed by Metachem's filing of a bankruptcy petition in spring 2002. In summer 2003, after evaluating the risks associated with the Site, EPA and DNREC began exploring the possibility of a ROD Amendment for disposal of the liquid chemicals remaining on-site. In fall 2003, EPA began work on a Focused Feasibility Study to evaluate the various options for disposal of the liquid chemicals, completing that work in spring 2004. The Proposed Remedial Action Plan (PRAP) was prepared shortly thereafter.

On April 22, 2004, EPA published the PRAP and announced the opening of the public comment period. The PRAP summarized the findings of the Focused Feasibility Study and outlined EPA's plans to amend the 1995 Record of Decision (ROD) for Operable Units One and Two of the Standard Chlorine of Delaware, Inc. Superfund Site. EPA's 30-day public comment period ran from April 22, 2004 through May 21, 2004. EPA held a public meeting on May 4, 2004, approximately midway through the public comment period, to discuss the PRAP with the public and to solicit public comment on the plan.

EPA received comments on the PRAP at the public meeting and through mail and email. It is important to note that this responsiveness summary only addresses those questions and comments determined by EPA to be relevant to the selection of a remedial alternative for cleanup of the liquid chemicals remaining on-site. EPA carefully considered state and community acceptance prior to reaching a final decision regarding the remedy. Amendment No. 1 to the ROD details EPA's final cleanup decision.

The comments received did not suggest significant changes to the proposed remedy, and those commentators who spoke against the proposed remedy did not suggest a viable alternative. Off-site incineration represents the best balance with respect to the nine criteria EPA uses to evaluate remedial alternatives (See ROD Amendment Section VI.).

SUMMARY OF COMMENTS FROM THE PUBLIC MEETING

This section provides a summary of the public comments from the public meeting on May 4, 2004.

1. Would off-site incineration be done by a low bid contractor? I wouldn't want you to go with a low-ball bid and have a problem with the quality of their work.

EPA Response: *The decision to award a contract for the work would be based on environmental compliance and technical qualifications as well as low bid. Any incineration facility this material goes to will have to be operating in accordance with its permits.*

2. I really want to talk about the dioxins and PCBs that have been found here. And, first off, I really support incinerating, getting rid of it, making it history, getting it out of our total environment. They have to be destroyed and not stored for future generations...

EPA Response: *Under this ROD Amendment, EPA will be disposing of the bulk liquid chemicals containing dioxins and PCBs not already disposed of by EPA's Removal Program. PCB containing liquids to be removed from the Site under this ROD Amendment may include rinse fluids, column bottoms, and the contents of one tank. In addition to these PCB containing liquids, there were until recently other bulk liquids stored onsite that contained PCBs. However, EPA used distillation equipment present on-site to reduce the volume of liquids containing PCBs and dioxins. Distillation separated the material by boiling point, generating two output streams, a "light" stream that is not PCB-containing and will remain liquid at room temperature, and a "heavy" stream where the PCBs and dioxins are concentrated. The "light" stream was returned to on-site storage tanks awaiting commercial use or, if necessary, disposal subject to this ROD Amendment. The "heavy" stream was placed into heavy-duty plastic storage totes to await disposal under a future decision document.*

3. Are there other companies out there that might be willing to take these chemicals in their current form for use in their processes?

EPA Response: *For the past two years EPA has explored options for allowing the liquid chemicals at the Site to remain in commercial use. We have had some success, and have sent over 400,000 gallons of liquid chemicals to other companies. If EPA's Removal Program is successful in transferring to other companies all the remaining liquid chemicals believed to have commercial value, this would significantly reduce the volume of liquid chemicals remaining to be disposed of under this ROD Amendment. Regardless of the exact amount returned to commerce, a significant fraction of the liquid chemicals is not of commercial interest and we will need to dispose of it.*

4. EPA has an obligation to consider public opinion, public comment on what you're proposing to do. Now, I don't think you can do that in the absence of meaningful information. I would like the record to show that it's impossible for the public to understand or comment intelligently on what you have done here with the inadequate information that's been provided. So without being argumentative, I think the path you're on has great potential to produce litigation.

EPA Response: *It is appropriate procedure, and standard practice, that EPA makes many decisions without first soliciting public comment. One such decision made in accordance with our procedures, and therefore without public comment, was the EPA Removal program's decision regarding the degree to which it was appropriate to separate the liquid chemicals. EPA made that decision by weighing the costs of separation (in time, effort, risk, and money) against the benefits (in reduced disposal time of the resulting products, potential to return material to commerce that would otherwise need to be disposed of, reduced disposal cost by concentrating the PCBs and other heavy organics into a smaller volume, etc.) That decision, which ended up being to complete the Chlorobenzene Removal and Separation Project, was completed prior to the issuance of this ROD Amendment.*

Other EPA decisions are made after soliciting and considering public comment. One example of a decision that takes into consideration public comment is EPA's decision, contained in this ROD Amendment, regarding how to address the bulk liquid chemicals to be removed from aboveground storage tanks on-site.

EPA believes it has provided adequate information to explain what we are proposing to do. The Administrative Record (AR) includes all the documents EPA used in making this decision. The AR was available during the public comment period, and can be found online at www.epa.gov/arweb and at the DNREC office in New Castle, DE, (call 302-395-2600) as well as at the EPA Regional Office in Philadelphia (call 215-814-3157).

5. You mentioned 1.3 million gallons several times. How much liquid will be disposed of under this proposal?

EPA Response: *The estimate of 1.3 million gallons is approximate, and is based on an inventory of the liquid chemicals present on-site as of November 24, 2003. The volume has changed since then and will continue to change as a result of ongoing cleanup activities, including the recently-completed Chlorobenzene Removal and Separation Project, as well as any disposal of liquid waste or return of material to commerce. EPA used a volume estimate of 1.3 million gallons in estimating disposal cost and disposal time.*

6. I object to the absence from tonight's meeting of Mr. Towle [the EPA On-Scene Coordinator] and his Emergency Removal operation. It appears to me that the Emergency Removal program's practice of shipping chlorobenzenes from the Site to Mexico is integrally connected to what you're talking about tonight.

EPA Response: *The Proposed Plan deals with the liquid chemicals to be removed from the Site after efforts to transfer the chemicals to third parties as products are concluded. These transfers, which are being handled by Mike Towle and the Emergency Removal Program, are not part of the Proposed Plan.*

7. Isn't it a violation of the Resource Conservation and Recovery Act (RCRA) to put any of these chemicals into commercial use?

EPA Response: *The remedy selected through this ROD Amendment will comply with all*

applicable requirements, including RCRA. The decision to return some chemicals to commercial use is not being made by this ROD Amendment, which addresses the off-site incineration of the chemicals after they have been classified as a hazardous waste. Because RCRA only applies to waste, its provisions do not govern the handling of commercially viable material; as a result, EPA does not believe that the return of these chemicals to commercial use constitutes any violation of RCRA.

8. I guess you have noticed nobody wants the VX [nerve gas] waste to come here [to the area, for disposal at the nearby DuPont facility in Deepwater, NJ]. What happens if you get ready to send this waste off to some other town for incineration and the people in that town decide they're adamantly against having this waste shipped to their town?

EPA Response: *For many years waste from the Metachem facility has been sent off-site for incineration and EPA is not aware of any case where this waste was refused by the receiving community. The facilities this waste is typically sent to are in operation and accepting material from all over the country on a daily basis. There are numerous candidate facilities, and EPA's Emergency Removal program has sent similar material off-site for incineration in recent months and has not had a problem. If a host community objected to having this waste shipped to its town, EPA would consider the objection.*

9. As a follow-up, would the Agency notify the receiving community that this stuff might be sent to their town for incineration?

EPA Response: *EPA's policy is to notify the EPA Region that is home to the receiving facility, and also the State Environmental Agency of the receiving state. EPA does not notify the receiving communities. These incinerators are in routine operation all the time and are permitted by the appropriate regulatory agency to deal with these wastes. These wastes would constitute some small portion of the normal shipments of material treated at these facilities.*

10. Is the incinerator or incinerators that will receive this material known yet?

EPA Response: *The selection of a particular incineration facility or facilities has not been done yet. That is typically done during the remedial design phase, which follows after EPA issues a Record of Decision, or ROD Amendment, in this case. The law (CERCLA §121(d)(3)) requires that the incineration facility be in compliance with all applicable State and Federal laws.*

11. Is there any public notification or public involvement as EPA makes the decision about where this stuff would be sent to be incinerated?

EPA Response: *Other than the notice to the receiving EPA Region and environmental agency of the receiving state, there would not be any sort of public notification or involvement.*

12. If you send 1.3 million gallons of principal threat wastes and they are burned in an incinerator with a destruction efficiency of 99.99 percent, that means 0.01 percent of what you sent in is going to come out the stack or might come out the stack. What is your assessment of what might emerge from the smokestack of an incinerator to which you might send this stuff? If a small

amount of chlorobenzenes are released from the smokestack, would it harm the ozone layer?

EPA Response: *It is impossible to predict with certainty the exact chemical species that will be emitted from any combustion process. What can be said is that, by regulation (40 CFR §264.343(a)), 99.99% of all chlorobenzenes and 99.9999% of all PCBs must be destroyed. In reality, a well-operated incinerator should achieve greater than 99.9999% destruction of all incoming organic compounds. Consequently, we estimate that less than one pound of chlorobenzenes will be emitted for every million pounds of chlorobenzenes fed to the incinerator. At that efficiency, the organics that are emitted when burning these wastes would not be discernibly different from those emitted when burning any fossil fuel or other waste material. Additionally, chlorobenzenes are not ozone depleting substances, and therefore do not harm the ozone layer. When released to the atmosphere they are slowly broken down by reaction with other chemicals and sunlight or can be removed by rain.*

Inorganic (i.e. metals and chloride) emissions are controlled to meet site-specific limits established in each individual incinerator's permit. Control is achieved by a combination of limiting the amount of each constituent in the waste feed and by setting minimum air pollution control device operating limits. However, since the site-specific air pollution control efficiency usually remains relatively constant, most incinerator permits rely primarily on feed rate limits to control inorganic emission rates. Wastes shipped from the SCD Site would meet the existing feed rate limits for the selected incinerator. The percentage of each inorganic constituent in the waste feed that is emitted to the atmosphere will vary according to the air pollution control equipment in use at each site. For the inorganic constituents found in the SCD Site wastes, we estimate that between 0.1 and 0.01% will be emitted from most commercial incinerators.

In the event the material is sent to an EPA-permitted RCRA cement kiln, which have higher operating temperatures and longer residence times than are typically used in EPA-permitted RCRA incinerators, emissions are expected to be within risk-based emission limits.

Finally, it is important to note that nearly every EPA-permitted RCRA incinerator and EPA-permitted RCRA cement kiln has completed a comprehensive risk assessment demonstrating that even its "worst-case" emissions do not pose a significant risk to human health or the environment.

13. Why did you eliminate expanded separation? Based on the material in the Focused Feasibility Study (FFS), expanded separation appears to be a way to reduce the amount of material that is incinerated or otherwise disposed of?

EPA Response: *EPA decided that the best balance of cost and benefit could be achieved by completing the Chlorobenzene Removal and Separation Project (CR/SP), which had been suspended in fall 2003. EPA's Emergency Removal program re-started the CR/SP in May 2004 and completed it in July 2004. Since the CR/SP was completed before this Amendment, the Proposed Plan and ROD Amendment do not consider to what degree the liquid chemicals should be separated. Instead, they consider what to do with the liquid chemicals to be removed following the CR/SP.*

14. Some of the cost estimate numbers in the FFS and the Proposed Plan are different. What is the reason for this inconsistency?

EPA Response *An incorrect interest rate (5%) was used in the cost estimate calculations in the FFS. The Proposed Plan includes cost estimates calculated using the correct (7%) interest rate.*

15. I think we all know that this Site is a mess and that there's no ideal or desirable solution. There's only the least undesirable solution. (...) The solution we want minimizes the continuing hazard for the people of this area and also minimizes hazards for people on the receiving end of this stuff. I know you think it's legal to dump it on Mexico. I know you think it's legal to burn it in East Liverpool, Ohio. We all know whether it's legal is not an acceptable answer to what should be done.

EPA Response: *The NCP requires the development of a list of cleanup alternatives, then requires that these alternatives be put through careful analysis before selecting one of them (see 40 CFR §300.430). The first and most fundamental of the nine criteria that the Superfund law requires EPA to use in evaluating the cleanup alternatives is overall protection of human health and the environment. It is what is called a threshold criterion, meaning EPA cannot select a remedy that is not protective of human health and the environment. This criterion is similar to an "assessment of environmental impacts." EPA evaluated the alternatives' protectiveness of human health and the environment, as well as the remaining eight criteria (see the Evaluation of Alternatives Section of the ROD Amendment). This evaluation, along with other information in the ROD Amendment and Administrative Record, formed the basis for EPA's decision.*

16. If chemical oxidation is the most environmentally safe because, if I understand correctly, it results in non-toxic residuals, why not do that? I understand that it's 20 times more costly. That's a huge amount of money, but isn't there a way to get that kind of money if it's the safest way to get rid of all this waste? After all, what is the value of a human life?

EPA Response: *When evaluating alternatives, EPA looks first at the two threshold criteria, overall protectiveness of human health and the environment, and compliance with Federal and State regulatory requirements. Once past those hurdles, cost is among five criteria that we consider collectively as a secondary consideration.*

There is no guarantee that chemical oxidation would be able to carry through to fully non-toxic residuals. Also, in this case, chemical oxidation is estimated to have a far higher cost than another technically sound alternative that EPA found could meet the goal of addressing this material in an environmentally sound way, and that will be protective of human health and the environment, so EPA did not evaluate chemical oxidation further.

17. Thank you for giving me time to talk tonight. In defense of you, I think you have done a good job here in putting this thing together. You've got a thankless job...We have got to get rid of this stuff. I'm not saying how...but it's got to be done safely.

EPA Response: *Comment noted.*

COMMENTS FROM OTHER SOURCES (POSTAL MAIL, EMAIL)

18. Please consider the [thermal] oxidation process in the remedy for the liquid contaminants.

EPA Response: *In a follow-up telephone call to this commentor, EPA was told that the commentor favored thermal (not chemical) oxidation. EPA's preferred alternative, off-site incineration, will involve combustion of waste in an incinerator, and possibly also in a cement kiln. Both incinerators and cement kilns are thermal oxidation processes.*

19. Wouldn't it be better to destroy the chemicals on-site, or if not possible on-site at least somewhere in the State of Delaware, rather than risking an accident during transportation to an out of state facility? The way people drive nowadays is something we all have to look at – an accident might not even be the fault of the driver.

EPA Response: *There are no commercial hazardous waste incinerators or cement kilns in Delaware, and without changes in state law it is not likely there will be any. EPA and its contractors will take appropriate steps to minimize the risk associated with waste transportation.*

20. Our comment about the PRAP: We prefer the off-site incineration.

EPA Response: *Comment noted.*

21. One commentor favored destruction of waste on-site.

EPA Response *EPA's analysis of alternatives did not find any viable on-site destruction technology. EPA ruled out on-site incineration because it would be prohibited by the State's Coastal Zone Management Act and even if legal would likely be less efficient than off-site incineration. EPA ruled out chemical oxidation, which might be done on-site, because the costs to implement it are estimated to be grossly excessive compared to its overall effectiveness.*

Note - The following series of comments were all from the same group of commentors.

22. We agree with the plan to remove the segregated chlorobenzene liquids and other chemical liquids from the Standard Chlorine facility as soon as possible.

EPA Response: *Comment noted.*

23. We would like to see the liquids recycled in a commercial manufacturing process, either domestic or foreign, if this can be accomplished in a safe and timely manner.

EPA Response: *EPA's Removal Program is returning to commerce as much of the liquids as possible. However, that activity is not part of EPA's remedial action. The liquids addressed by this remedial action will be those that EPA was unable to return to commerce within a reasonable timeframe.*

24. If commercial re-use in a manufacturing process cannot be accomplished within a reasonable

timeframe, then we support the off-site incineration option.

EPA Response: *Comment noted.*

25. While we appreciate the EPA pursuing commercial reuse alternatives, we encourage the EPA to solicit bids now for the off-site incineration option, so that permitting and transport of the liquids to the selected incinerator can proceed quickly if the material cannot be commercially reused.

EPA Response *It would be premature for EPA to solicit bids now. EPA first has to select a remedy in a ROD Amendment. We then need to secure funding for the work from EPA Headquarters, and can then prepare a contract and solicit bids.*

26. In any case, we would like the chemicals removed from the facility by the end of 2004 in order to eliminate the potential threat of a spill or tank failure.

EPA Response: *EPA will work to remove the threat posed by the liquids as quickly as possible, though it may not be possible to complete this work by the end of 2004. Once disposal begins, EPA should have a firmer schedule for completion, which will be publicly available.*